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Tripping into Treatment: Comparing Initial and Current Motivations for Psychedelic Use

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ABSTRACT

Psychedelic drugs are currently being explored for their therapeutic potential for a variety of health conditions. The recent increased public interest in psychedelics necessitates empirical investigation into motivations for use among users as well as how motivations may change over time. We asked a large sample of participants reporting naturalistic psychedelic use ($N = 1221$) about their motivations for using psychedelics initially (i.e. their first time) as well as currently. We found that motivations for psychedelic use change substantially over time, with initial use typically for recreation or exploration, and later use more for therapeutic or personal growth reasons, including managing mental health conditions, growing spiritually, connecting with nature, improving creativity, and managing trauma. These results highlight the distinct and shifting motivations for engaging in psychedelic use. Although the study was limited by a retrospective design, it is the first to show that motivations for using psychedelics may change over time, with initial use focused on recreation and curiosity but subsequent use more motivated by self-improvement (e.g. enhancing relationships and health). Future prospective designs and qualitative interviews may aid in further elucidating the mechanisms underlying these shifts in motivations over time.

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Introduction

In recent years, clinical trials combining psychedelics with therapy have demonstrated promise for a wide variety of psychiatric conditions (Bogenschutz et al. 2022; Carhart-Harris et al. 2021; Johnson et al. 2014; Mitchell et al. 2021). Fueled by these promising results, highly popularized accounts of psychedelic benefits, and the pressing need for improved mental health treatments, there has been a great deal of public interest in psychedelics (Aday, Bloesch, and Davoli 2020). This enthusiasm has contributed to many policy efforts to liberalize access to psychedelics, including recently enacted state-wide measures in Oregon and Colorado that have decriminalized their use and mandated provisions for allowing psilocybin-assisted therapy (Boehnke, Davis, and McAfee 2022; Siegel et al. 2022). Concurrently, studies have shown a recent increase in lifetime psychedelic use among adolescents and young adults (Yockey and King 2021; Yockey, Vidourek, and King 2020). Understanding motivations for using psychedelics is important as they can predict outcomes, for example, St Arnaud and Sharpe (2023) found that psychedelic use to cope with negative affect was associated with lower personal growth, lower life satisfaction and well-being, and greater mental distress. Psychedelic use for self-expansion was associated with higher life satisfaction and well-being, and lesser mental distress (St Arnaud and Sharpe 2023). Given the rapidly changing legal environment, cultural narratives, and growing prevalence of psychedelics use, it is important to empirically examine motivations for psychedelic use as well as how they may change over time.

Although there is considerable research characterizing motives that people have for taking psychedelics (Basedow and Kuitunen-Paul 2022), little is known about whether these motivations shift over time or after their initial experience. Surveys of adults using these compounds naturalistically suggest that they are primarily using them with therapeutic (largely targeted at mental health) or spiritual intent (Aday et al. 2023). In their review of 37 publications on motivations for psychedelic use, Basedow and Kuitunen-Paul (2022) found that expansion (78%), coping (68%), enhancement (57%), social (24%), and conformity (16%) motives were the most frequently cited motives in the quantitative literature. Further, they found that identity

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and spiritual motives were repeatedly noted in the qualitative literature. However, no studies to-date have examined how motivations may shift over time or the lifespan. An intuitive hypothesis is that individuals may begin with recreational intentions when first exploring psychedelic use and shift to therapeutic intentions over time, because of unintended therapeutic benefits from earlier use or changes in personality with age, but this remains untested. Adolescence is associated with exploration and risk taking, with adverse outcomes for some individuals, but ultimately facilitating the goals of adulthood (Kruger and Nesse 2006).

In the current report, our objective was to understand patterns of psychedelic use motivations over time in a large group of people reporting naturalistic psychedelic use. We hypothesized that initial use would largely be for fun or recreational reasons and that current motivations would shift toward mental health or therapeutic reasons. We also explored whether participants who reported their first use in adolescence had different motivations for use than those who reported their first use in adulthood.

Methods

Participant recruitment and eligibility

We recruited participants from September 18 to November 5, 2022, in person and via posted advertisements at Entheofest, a psychedelic advocacy event on the afternoon of September 18, 2022, in Ann Arbor, MI (17.1% of participants), as well as via e-mail listservs and social media platforms (e.g., Reddit, Facebook; 82.9% of participants). Participants completed an anonymous online Qualtrics (Provo, UT) survey with the "Prevent Ballot Box Stuffing" setting activated to prevent duplicate responses. No metadata (e.g., IP Address, location, etc.) were collected. Individuals needed to be 18 or more years of age to participate.

Survey development

We asked "How old were you (in years) when you had your first psychedelic experience?;" "Which psychedelic substance(s) have you used?;" "Approximately how frequently have you taken psychedelic substances in the past 5 years?" with response options:

Not in the past 5 years, Once, Once per year, Once every 6 months, Once every 2–5 months, Once every month, Once every week, and More than once per week; "Which of the following reasons initially motivated you to use psychedelics? Please select all that apply," with response options: Treat a physical health condition, Treat a mental health condition, Manage past trauma, Manage current (at the time) trauma, Improve general mental health, Reduce or end use of prescription medications, Reduce or end use of substances(s) other than prescription medications, Spiritual exploration/growth, Improve/enhance relationship(s), Enhance creativity, Connect with nature, Curiosity, Fun/recreational activities, Social/peer pressure, Boredom, As an escape, Other, please describe:; and "Which of the following reasons motivate you to use psychedelics now? Please select all that apply.," with the same response options. Motivations for using psychedelics were adapted from the previous psychedelic literature (Aday et al. 2023; Basedow and Kuitunen-Paul 2022; Glynos et al. 2022), and from discussions among the research team. Table 1 lists response options for the motivation items. We collected demographic information at the end of the survey, including respondents' age, gender, race, annual household income, education, and location (Country, U.S. State, etc.).

Table 1. Differences in proportions who endorsed initial and current motives.

	Initial	Current	Difference
Improve general mental health	.27	.76	.49***
Connect with nature	.28	.65	.38***
Improve/enhance relationship(s)	.18	.54	.36***
Enhance creativity	.26	.60	.34***
Spiritual exploration/growth	.51	.80	.30***
Treat a mental health condition	.20	.50	.30***
Manage past trauma	.18	.48	.30***
Curiosity	.68	.42	−.26***
Manage current (at the time) trauma	.10	.25	.16***
Reduce/end use of prescription meds	.06	.19	.13***
Reduce/end use of [illicit] substances(s)	.04	.16	.12***
Fun/recreational activities	.57	.45	−.11***
Treat a physical health condition	.03	.12	.09***
Social/peer pressure	.07	.01	−.06***
Boredom	.06	.04	−.02**
As an escape	.09	.08	−.02

Chi-square tests showing statistically significant differences are indicated for each row with ***$p < .001$ or **$p < .01$.

Statistical analysis

We excluded seven respondents who reported being between 0–11 years old at first use. We categorized motivation as initial only, initial and current, and current only. Chi-square analyses compared difference in proportions of participants across these three categories for each motivation (Table 1). We compared motives for initially trying psychedelics between those who first tried them as adolescents who were 12–19 years old ($n = 599$) versus as adults who were 20 years or older ($n = 603$, Table 2), based on the World Health Organization (2024) definition of adolescence and a median split of the data. Respondents were classified into four frequencies of psychedelic use: less than annually (18.2%), annual (14.1%), greater than annually but less than monthly (43.5%), and monthly or more frequently (23.7%), excluding cases with missing frequency data (0.3%). Chi-square analyses compared difference in proportions of participants by frequency of use for each motivation (Table 3). A one-way ANOVA with a Tukey post-hoc test compared the proportions of respondents in

Table 2. Percent endorsing initial individual motives for psychedelic use in adulthood compared to initial use in adolescence.

	Age of Initial Use		
	Adolescent	Adult	Difference
	n = 599	n = 603	
Endorsed More in Adulthood			
Treat a mental health condition	.09	.32	.21***
Improve general mental health	.17	.37	.20***
Manage past trauma	.09	.26	.17***
Spiritual exploration/growth	.43	.58	.15***
Improve/enhance relationship(s)	.12	.23	.11***
Reduce/end use of prescription meds	.03	.09	.06***
Connect with nature	.25	.30	.05*
Manage current (at the time) trauma	.07	.12	.05**
Reduce/end use of [illicit] substances(s)	.02	.05	.03**
Treat a physical health condition	.01	.04	.03**
Enhance creativity	.12	.14	.02
Endorsed Less in Adulthood			
Fun/recreational activities	.68	.45	−.23***
Curiosity	.73	.62	−.11***
Social/peer pressure	.11	.03	−.08***
As an escape	.12	.06	−.06***
Boredom	.09	.03	−.06***

The Difference column shows the differences in the rates at which respondents first used as an adult compared to as an adolescent. Positive rates mean they were more often endorsed as a reason for initial use as an adult. Chi-square test results with statistical significance are indicated for each row by ***$p < .001$, **$p < .01$, *$p < .05$.

Table 3. Current motives for taking psychedelics by frequency of psychedelic use.

	Frequency of Psychedelic Use				Total	
	< Annual	Annual	> Annual, < Monthly	Monthly+	n	%
Spiritual exploration/growth	$68.2\%_{a}$	$81.0\%_{b}$	$85.6\%_{b}$	$80.4\%_{b}$	966	80.6%***
Improve general mental health	$60.8\%_{a}$	$79.2\%_{b}$	$79.2\%_{b}$	$79.3\%_{b}$	910	75.9%***
Connect with nature	$49.3\%_{a}$	$61.9\%_{a,b}$	$74.3\%_{c}$	$63.2\%_{b}$	784	65.4%***
Enhance creativity	$49.8\%_{a}$	$55.4\%_{a,b}$	$64.1\%_{b}$	$61.4\%_{a,b}$	715	59.6%**
Improve/enhance relationship(s)	$40.1\%_{a}$	$50.6\%_{a,b}$	$59.5\%_{b}$	$57.2\%_{b}$	650	54.2%***
Treat a mental health condition	$40.6\%_{a}$	$44.0\%_{a}$	$48.6\%_{a}$	$64.2\%_{b}$	602	50.2%***
Manage past trauma	$41.5\%_{a}$	$39.3\%_{a}$	$49.7\%_{a,b}$	$55.1\%_{b}$	576	48.0%**
Fun/recreational activities	$27.6\%_{a}$	$48.2\%_{b}$	$51.8\%_{b}$	$44.9\%_{b}$	543	45.3%***
Curiosity	$37.3\%_{a}$	$48.2\%_{a}$	$43.9\%_{a}$	$37.2\%_{a}$	500	41.7%*
Manage current (at the time) trauma	$15.7\%_{a}$	$20.2\%_{a,b}$	$27.6\%_{b}$	$31.6\%_{b}$	309	25.4%***
Reduce or end use of prescription medications	$14.3\%_{a}$	$17.3\%_{a,b}$	$18.0\%_{a}$	$26.7\%_{b}$	231	19.3%**
Reduce or end use of substances(s) other than prescription medications	$10.1\%_{a}$	$14.3\%_{a,b}$	$16.3\%_{a,b}$	$19.3\%_{b}$	187	15.6%*
Treat a physical health condition	$11.1\%_{a,b}$	$7.1\%_{b}$	$11.2\%_{a,b}$	$17.5\%_{a}$	145	12.1%**
As an escape	7.4%	5.4%	8.5%	7.4%	91	7.6%
Boredom	3.2%	1.8%	4.0%	3.9%	42	3.5%
Social/peer pressure	0.9%	1.2%	0.9%	0.7%	11	0.9%

The Total column shows the proportion of respondents who endorsed each current motive. Chi-square test results with statistical significance are indicated by ***$p < .001$, **$p < .01$, *$p < .05$. Individual cell proportions within rows were compared using post hoc z-tests with different subscripts indicating statistically significant differences, adjusted for multiple comparisons using the Bonferroni method.

each frequency classification by the number of motivations endorsed for current psychedelics use (Table 3).

Ethics

All study procedures were approved prior to data collection by the University of Michigan Health and Behavioral Sciences Institutional Review Board under the protocol HUM00205639. Participants were not compensated and could withdraw at any time.

Results

Participant characteristics

Respondents ($N = 1202$) were 38.5 years old on average ($SD = 12.0$, range 18 to 84 years old), 48% women, 46.8% men, and 5.2% identifying as a different gender. Most respondents identified as White (83.9%), followed by Hispanic or Latino/a/x (6.0%), Native American (4.3%), African American or Black (3.2%), and Asian (2.8%). Most (96.0%) were from the United States, with each state represented but most coming from Michigan (62.0%) and California (6.7%). Many respondents earned at least a bachelor's degree (59.0%), and annual income ranged from less than $25,000 (12.6%) to more than $150,000 (15.3%) with the Median being $50,000–$74,999 (16.6%).

Respondents reported being 23.7 years old on average ($SD = 0.7$, range 12 to 75 years old) when they first tried psychedelics. There was an average of 14.8 ($SD = 13.2$ years) between current age and age of first psychedelic use. On average, respondents had tried three of the 15 different psychedelics presented in the survey, the most common being psilocybin mushrooms (93.4%), LSD (67.3%), MDMA (57.6%), Ketamine (32.0%), and DMT (30.6%); 98.5% of respondents had tried at least one of these psychedelics.

Motivations for psychedelic use

Curiosity (67.6%), fun/recreational activities(56.5%), and spiritual exploration/growth (50.5%) were endorsed by most participants as initial motivations for the use of psychedelics (Table 1). In contrast, spiritual exploration/growth (80.4%), improve general mental health (75.8%), connect with nature (65.3%), enhance creativity (59.6%), improve/enhance relationships (54.2%), and treat a mental health condition (50.2%) were the most frequently endorsed current motivations for the use of psychedelics. Respondents endorsed more current motives for taking psychedelics ($M = 6.1$, $SD = 3.1$) than they did for initial use ($M = 3.6$, $SD = 2.6$), $t(1198) = 2.52$, $p < .001$, $d = 0.74$.

Those who first tried psychedelics before adulthood were motivated more often by the need for stimulation and social approval, i.e., recreation, escapism, peer pressure, and boredom, whereas those who first tried as adults were motivated more by personal improvements, i.e., spiritual growth, mental and physical health, connection with nature, relationship improvement, and reduced dependence on licit and illicit drugs. The largest difference was for treating a mental health condition, which was an initial motive for 9.2% of adolescents compared to 31.5% of adults. The next largest differences were for boredom and social pressure, both of which were reported as initial motives in those first trying as adolescents at slightly more than three times the rate (9.2% and 10.6%, respectively) as for adults (2.7% and 3.3%, respectively).

Most participants endorsed spiritual exploration/growth, improve general mental health, and enhance creativity as motivations for psychedelics use regardless of how frequently they used psychedelics (Table S1). However, some motivations exhibited differences by frequency of use. Those who used psychedelics more frequently were especially more likely to endorse treating a mental health condition, managing past trauma, managing current (at the time) trauma, and improving/enhancing relationship(s). The trend for individuals motivated to reduce or end their use of substances(s) other than prescription medications to use psychedelics more frequently approached but did not reach statistical significance. Boredom, social/peer pressure, and as an escape did not differ by frequency of use and had the lowest rates of endorsement overall. Participants who were recruited via the Entheofest event were more likely to endorse improving or enhancing relationship(s), enhancing creativity, managing past trauma, and treating a physical health condition as current motives for using psychedelics (Table 4).

Discussion

Our findings provide evidence that motivations for psychedelic use change substantially over time, with initial use typically for recreation or exploration and later use more for therapeutic reasons. Complementing these findings, we also show that initial use during adolescence is motivated by recreation or exploration, whereas a higher proportion of people whose initial use was after adolescence reported using psychedelics for therapeutic reasons. These therapeutic reasons resided within the domains of mental health and relationships between self and others, including to improve general mental health or treat a mental health condition, connect with nature, and manage trauma. Although there was a shift from

Table 4. Proportion of respondents endorsing current motives by entheofest or online recruitment.

	Recruitment Mode		
	Entheofest	Online	Difference
Improve general mental health	.80	.75	.05
Connect with nature	.71	.64	.07
Improve/enhance relationship(s)	.61	.53	.08*
Enhance creativity	.68	.58	.10**
Spiritual exploration/growth	.82	.80	.02
Treat a mental health condition	.54	.50	.04
Manage past trauma	.58	.46	.08**
Curiosity	.45	.41	.04
Manage current (at the time) trauma	.29	.25	.04
Reduce/end use of prescription meds	.23	.18	.05
Reduce/end use of [illicit] substances(s)	.18	.15	.03
Fun/recreational activities	.47	.45	.02
Treat a physical health condition	.17	.11	.06*
Social/peer pressure	.02	.08	−.06
Boredom	.03	.04	−.01
As an escape	.08	.07	.01

χ^2 tests showing statistically significant differences are indicated for each row with $^{**}p < .01$, $^{*}p < .05$. Significance levels adjusted for multiple comparisons using the Bonferroni method.

initial to current motives in reducing or ending use of substances or to treat a physical health condition, the overall proportion of individuals endorsing these motives was substantially smaller.

Increased connections to self, others, nature, and spirit have been found to be a core component and primary outcome of many psychedelic experiences (Argento et al. 2019; Thomas et al. 2013; Yaden et al. 2017) and has recently led to the development of the Watts Connectedness Scale to more sensitively measure connectedness to self, others, and the wider world, following psychedelic experiences (Watts et al. 2022). Considering emerging research highlighting the negative health impacts of loneliness and isolation (Cacioppo and Cacioppo 2018), and the growing understanding of the importance of social connectedness to overall physical and psychological well-being (Pietrabissa and Simpson 2020), social connectedness may ultimately have broader implications for mental health research (Watts et al. 2022).

Set and setting are terms used to emphasize the importance of context on the qualities of psychedelic experiences and long-term mental health outcomes (Carhart-Harris et al. 2018; Garcia-Romeu, Kersgaard, and Addy 2016). Having a clear intention and strong expectations for a psychedelic experience predict having mystical-type experiences, which in turn predict positive changes in well-being after a psychedelic experience (Haijen et al. 2018). As in our study, there has been considerable variation in motivations for psychedelic use across previous studies. Kettner, Mason, and Kuypers (2019) found that the most common motivations for psychedelic users were to feel euphoric, enhance other activities, and broaden consciousness, like their motivations for the use of other types of psychoactive substances. Only one-fifth of reports of psychedelic experiences documented in Acevedo et al. (2024) review indicated a therapeutic intent. However, nearly all Western participants in ayahuasca experiences reported motivations for healing or growth (Bathje et al. 2024). Given the crucial role of motivations and intentions in moderating therapeutic outcomes with psychedelics (Aday et al. 2022), our findings that motivations often shift over time may help reconcile disparate findings with psychedelic use and long-term outcomes.

Implications

These findings have several implications for the current psychedelic landscape. First, they highlight the considerable public interest in using psychedelics as medicine, with this shifting motivation perhaps reflecting changes in the psychedelic zeitgeist over the last decade (Aday, Bloesch, and Davoli 2020). It may also be the case that participants approached their initial psychedelic experience with a recreational intention, as they would with most other forms of illicit substance use, unexpectedly had a therapeutic first experience, and then explored this intention in the future. Future prospective study designs and qualitative interviews may be able to lend further insight into this speculative explanation.

Limitations

The retrospective nature of this research has some strengths and limitations. The ability to reflect on one's own thinking (i.e., metacognition) develops over the course of adolescence, meaning that teens may not

have a strong grasp on what motivates their behaviors. Thus, asking adolescents directly what motivates them might not be as accurate as asking an adult what motivated them as an adolescent. For example, teens are often unaware of what constitutes mental illness and may not recognize addressing mental illness as a motivating factor for them (Coles et al. 2016). Also, adults may not accurately remember their motivations as adolescents. The study was also limited by a convenience sampling approach, which prevents us from understanding whether these results are representative of national trends of people using psychedelics (see Ona, Kohek, and Bouso 2022). The sample was largely White, and the survey was conducted in English (see Williams and Labate 2020). Further, our cross-sectional design leaves participant recollection of past vs. current motivations subject to recall bias. Finally, we did not investigate other factors (e.g., personal trauma, illness, or loss) that may be associated with changing motivations over time.

Conclusions

In this study, we demonstrate that among people using psychedelics naturalistically, motivations for use shift substantially over time, with initial use focused more on exploration and recreational and later use focused more on therapeutic reasons – especially for mental health. Future research should investigate factors associated with this shift, as well as how to provide appropriate and safe infrastructure to support people using psychedelics for mental health reasons.

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Data availability statement

The data that support these findings are available from the corresponding author (DJK) upon request.

References

Acevedo, E. C., S. Uhler, K. P. White, and L. Al-Shawaf. 2024. What predicts beneficial outcomes in psychedelic use? A quantitative content analysis of psychedelic health outcomes. *Journal of Psychoactive Drugs* 1–10. Advance online publication. 10.1080/02791072.2024.2314729.

Aday, J. S., E. K. Bloesch, and C. C. Davoli. 2020. 2019: A year of expansion in psychedelic research, industry, and deregulation. *Drug Science, Policy and Law* 6:2050324520974484. doi: 10.1177/2050324520974484.

Aday, J. S., B. D. Heifets, S. D. Pratscher, E. Bradley, R. Rosen, and J. D. Woolley. 2022. Great expectations: recommendations for improving the methodological rigor of psychedelic clinical trials. *Psychopharmacology* 239 (6):1989–2010. doi: 10.1007/s00213-022-06123-7.

Aday, J. S., Z. Skiles, N. Eaton, L. Fredenburg, M. Pleet, J. Mantia, E. R. Bradley, G. Fernandes-Osterhold, and J. D. Woolley. 2023. Personal psychedelic use is common among a sample of psychedelic therapists: Implications for research and practice. *Psychedelic Medicine* 1 (1):27–37. doi: 10.1089/psymed.2022.0004.

Argento, E., R. Capler, G. Thomas, P. Lucas, and K. W. Tupper. 2019. Exploring ayahuasca-assisted therapy for addiction: A qualitative analysis of preliminary findings among an indigenous community in Canada. *Drug & Alcohol Review* 38 (7):781–89. doi: 10.1111/dar.12985.

Basedow, L. A., and S. Kuitunen-Paul. 2022. Motives for the use of serotonergic psychedelics: A systematic review. *Drug & Alcohol Review* 41 (6):1391–403. doi: 10.1111/dar.13480 .

Bathje, G. J., J. Fenton, D. Pillersdorf, and L. C. Hill 2024. A Qualitative Study of Intention and Impact of Ayahuasca Use by Westerners. *Journal of Humanistic Psychology* 64 (4):653–91. doi: 10.1177/00221678211008331.

Boehnke, K. F., A. K. Davis, and J. McAfee. 2022. Applying lessons from Cannabis to the psychedelic highway: Buckle up and build infrastructure. *JAMA Health Forum* 3 (6): e221618–221618. doi: 10.1001/jamahealthforum.2022.1618.

Bogenschutz, M. P., S. Ross, S. Bhatt, T. Baron, A. A. Forcehimes, E. Laska, S. E. Mennenga, K. O'Donnell, L. T. Owens, S. Podrebarac, et al. 2022. Percentage of heavy drinking days following psilocybin-assisted psychotherapy vs placebo in the treatment of adult patients with alcohol use disorder: A randomized clinical trial. *JAMA Psychiatry* 79 (10):953–62. doi: 10.1001/jamapsychiatry.2022.2096.

Cacioppo, J. T., and S. Cacioppo. 2018. The growing problem of loneliness. *Lancet* 391 (10119):424. doi: 10.1016/S0140-6736(18)30142-9.

Carhart-Harris, R., B. Giribaldi, R. Watts, M. Baker-Jones, A. Murphy-Beiner, R. Murphy, J. Martell, A. Blemings, D. Erritzoe, and D. J. Nutt. 2021. Trial of psilocybin versus escitalopram for depression. *New England Journal of Medicine* 384 (15):1402–11. doi: 10.1056/NEJMoa2032994.

Carhart-Harris, R. L., L. Roseman, E. Haijen, D. Erritzoe, R. Watts, I. Branchi, and M. Kaelen. 2018. Psychedelics and the essential importance of context. *Journal of Psychopharmacology* 32 (7):725–31. doi: 10.1177/0269881118754710.

Coles, M. E., A. Ravid, B. Gibb, D. George-Denn, L. R. Bronstein, and S. McLeod. 2016. Adolescent mental health literacy: Young people's knowledge of depression and social anxiety disorder. *Journal of Adolescent Health* 58 (1):57–62. doi: 10.1016/j.jadohealth.2015.09.017.

Garcia-Romeu, A., B. Kersgaard, and P. H. Addy. 2016. Clinical applications of hallucinogens: A review. *Experimental and Clinical Psychopharmacology* 24 (4):229–68. doi: 10.1037/pha0000084.

Glynos, N. G., C. W. Fields, J. Barron, M. Herberholz, D. J. Kruger, and K. F. Boehnke. 2022. Naturalistic psychedelic use: A world apart from clinical care. *Journal of Psychoactive Drugs* 55 (4):379–88. doi: 10.1080/02791072.2022.2108356.

Haijen, E. C. H. M., M. Kaelen, L. Roseman, C. Timmermann, H. Kettner, S. Russ, D. Nutt, R. E. Daws, A. D. G. Hampshire, R. Lorenz, et al. 2018. Predicting responses to psychedelics: A prospective study. *Frontiers in Pharmacology* 9:897. doi: 10.3389/fphar.2018.00897.

Johnson, M. W., A. Garcia-Romeu, M. P. Cosimano, and R. R. Griffiths. 2014. Pilot study of the 5-HT2AR agonist psilocybin in the treatment of tobacco addiction. *Journal of Psychopharmacology* 28 (11):983–92. doi: 10.1177/0269881114548296.

Kettner, H., N. L. Mason, and K. P. C. Kuypers. 2019. Motives for classical and novel psychoactive substances use in psychedelic polydrug psers. *Contemporary Drug Problems* 46 (3):304–20. doi: 10.1177/0091450919863899.

Kruger, D. J., and R. M. Nesse. 2006. An evolutionary life-history framework for understanding sex differences in human mortality rates. *Human Nature* 17 (1):74–97. doi: 10.1007/s12110-006-1021-z.

Mitchell, J. M., M. Bogenschutz, A. Lilienstein, C. Harrison, S. Kleiman, K. Parker-Guilbert, G. M. Ot'alora, W. Garas, C. Paleos, I. Gorman, et al. 2021. Mdma-assisted therapy for severe PTSD: A randomized, double blind, placebo-controlled phase 3 study. *Nature Medicine* 27 (6):1025–33. doi: 10.1038/s41591-021-01336-3.

Ona, G., M. Kohek, and J. C. Bouso. 2022. The illusion of knowledge in the emerging field of psychedelic research. *New Ideas in Psychology* 67:100967. doi: 10.1016/j.newideapsych.2022.100967.

Pietrabissa, G., and S. G. Simpson. 2020. Psychological consequences of social isolation during COVID-19 outbreak. *Frontiers in Psychology* 11:2201. doi: 10.3389/fpsyg.2020.02201.

Siegel, J. S., J. E. Daily, D. A. Perry, and G. E. Nicol 2023. Psychedelic drug legislative reform and legalization in the US. *JAMA Psychiatry* 80 (1):77–83. doi: 10.1001/jamapsychiatry.2022.4101.

St Arnaud, K. O., and D. Sharpe. 2023. Contextual parameters associated with positive and negative mental health in recreational psychedelic users. *Journal of Psychoactive Drugs* 55 (1):30–39. doi: 10.1080/02791072.2022.2039815.

Thomas, G., P. Lucas, N. R. Capler, K. W. Tupper, and G. Martin 2013. Ayahuasca-assisted therapy for addiction: Results from a preliminary observational study in Canada. *Current Drug Abuse Reviews* 6 (1):30–42. doi: 10.2174/15733998113099990003.

Watts, R., H. Kettner, D. Geerts, S. Gandy, L. Kartner, L. Mertens, C. Timmermann, M. M. Nour, M. Kaelen, D. Nutt, et al. 2022. The watts connectedness scale: A new scale for measuring a sense of connectedness to self, others, and world. *Psychopharmacology* 239 (11):3461–83. doi: 10.1007/s00213-022-06187-5.

Williams, M. T., and B. C. Labate. 2020. Diversity, equity, and access in psychedelic medicine. *Journal of Psychedelic Studies* 4 (1):1–3. doi: 10.1556/2054.2019.032.

World Health Organization. 2024. Adolescent health. https://www.who.int/health-topics/adolescent-health#tab=tab_1.

Yaden, D. B., J. Haidt, R. W. Hood, D. R. Vago, and A. B. Newberg. 2017. The varieties of self-transcendent experience. *Review of General Psychology* 21 (2):143–60. doi: 10.1037/gpr0000102.

Yockey, R. A., and K. A. King. 2021. Use of psilocybin ("mushrooms") among US adults: 2015–2018. *Journal of Psychedelic Studies* 5 (1):17–21. doi: 10.1556/2054.2020.00159.

Yockey, R. A., R. A. Vidourek, and K. A. King. 2020. Trends in LSD use among US adults: 2015–2018. *Drug & Alcohol Dependence* 212:108071. doi: 10.1016/j.drugalcdep.2020.108071.